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Taxation as Related to the Property and Income of Ohio Farmers

H. R. Moore

OHIO
AGRICULTURAL EXPERIMENT STATION
Wooster, Ohio

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TAXATION AS RELATED TO THE PROPERTY AND INCOME OF OHIO FARMERS

H. R. MOORE

INTRODUCTION

The aim of this study is to present certain information relative to farm taxation: (1) Tax data have been compared with the total income from Ohio's agriculture. (2) Consideration has been given to the relationship of property taxes to the income from farm property, the base upon which most taxes paid by farmers have rested. (3) The variation in the income realized on different farms is of sufficient magnitude to merit consideration. (4) The distribution of the farm tax burden through the process of valuation has been given sufficient space to demonstrate the presence of a very real problem in property valuation. A complete picture of the farm tax situation can hardly be presented at this point. But one may visualize the effect of certain important factors by observing in Figure 1 the trend in farm tax rates and tax valuations, and in Figure 2 the trend in taxes paid as compared with prices.

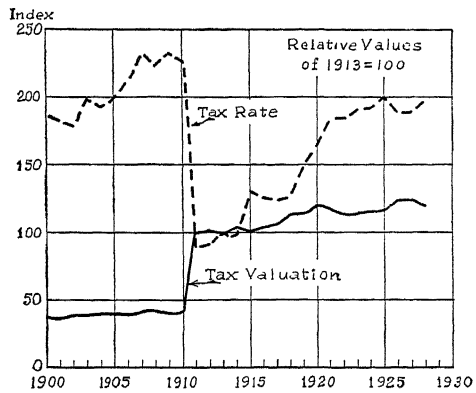

Fig. 1.—Trend in the average tax rates and tax valuations applied to Ohio farm property

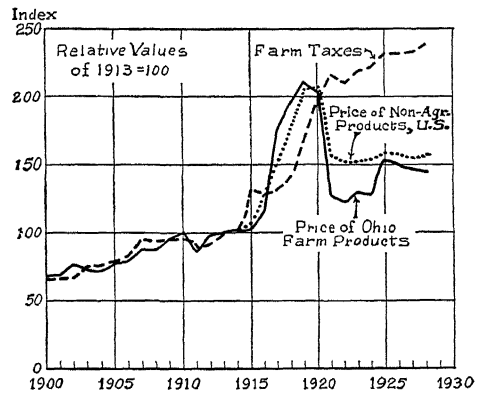

Fig. 2.—Trend in Ohio farm taxes and prices of farm products and of non-agricultural products

Property taxes are the product of the assessed valuation of the property multiplied by the tax rate. Back in the period 1900 to

1910, valuations were low on the average as compared with market value, but rates were extremely high. The resulting tax would seem reasonably low when compared with taxes in more recent years; however, the high rates were a heavy burden on such property as was assessed at its full value.

TABLE 1.—Index Numbers of Various Items of Importance in Ohio Farm Taxation

Year	Farm tax valuation* (1913=100)	Tax rates* (1913=100)	Taxes paid* (1913=100)	Price of Ohio farm products† (1913=100)	Farm taxes in terms of farm prices	Price of non-agricultural products, U. S.† (1913=100)	Gross cash farm income‡ (1913=100)
1900	37	186	69	68	100		
1901	36	183	66	69	96		
1902	37	178	66	76	87		
1903	38	197	75	73	103		
1904	39	193	75	72	104		
1905	39	199	78	76	103		
1906	39	212	85	79	105		
1907	41	231	95	87	98		
1908	42	223	94	87	108		
1909	41	232	95	95	101		
1910	42	227	95	100	95		103
1911	98	89	87	86	101		90
1912	101	91	92	98	94		94
1913	100	100	100	100	100	100	100
1914	104	97	101	101	100	101	107
1915	101	130	131	102	129	106	111
1916	103	125	129	116	111	123	122
1917	106	123	131	175	75	150	195
1918	113	126	142	195	73	178	244
1919	114	149	170	210	81	205	270
1920	120	165	197	204	97	206	241
1921	118	183	216	127	170	156	137
1922	114	184	210	122	172	152	137
1923	114	191	218	129	169	153	152
1924	115	192	221	128	172	154	152
1925	116	200	232	153	151	159	163
1926	124	187	232	149	155	156	174
1927	124	189	234	147	159	154	163
1928	120	198	238	144	165	156	148

*The index numbers of farm tax valuations, tax rates, and taxes paid were calculated from the data on these items reported for 88 rural townships, one in each county. These data were derived from the annual Reports of the Ohio Tax Commission.

†Price of Ohio Farm Products and of Non-Agricultural Products, U. S., derived from Index Numbers of Wages, Production, and Prices by J. I. Falconer, Ohio Experiment Station Bimonthly Bulletin, May-June 1930, P. 96. These index numbers have been converted to a 1913 base.

‡Gross cash farm income, calculated from Estimated Income from the Ohio Agricultural Industry, by V. R. Wertz, Ohio Agricultural Experiment Station Bulletin 450.

The attempted tax reform of 1910 reduced tax rates more than one half and more than doubled assessed valuations. The resulting tax yield remained about the same. This adjustment of rates and valuations probably gave a better distribution of the general property tax burden.

Since 1910 the demands for public revenues have steadily increased, but new tax sources have not been developed with sufficient rapidity to supply the new fiscal needs. Naturally, the objects reached by the property tax have had a heavier burden imposed upon them. As a result, at the present time both tax valuations and tax rates must be high to support the functions of local government.

Both tax needs and tax burden have been affected by price trends. Public revenues yield service through the price paid in the wages of public servants and in materials used in construction and maintenance of public properties. So long as the price of farm products increased as fast as, or faster than, farm taxes, which was the situation from 1900 to 1920, the resulting burden remained about constant, but the accumulation of forces which were making taxes high were not decidedly affected by the decline in prices following 1920. When converted to terms of prices of farm products, taxes were 65 per cent higher in 1928 than in 1913.

This change in farm tax burden was caused only in part by the disparity in prices between agricultural and non-agricultural commodities and wages, following 1920. Expansion in volume of public service has been notable in recent years. Such increase in volume can be roughly measured by the widening difference in the trends of taxes paid and commodity prices.

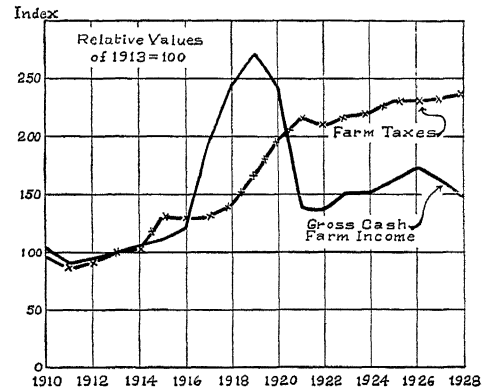

Fig. 3.—The trend of farm taxes and gross cash farm income in Ohio, 1910 to 1928

The consideration of price alone is not, perhaps, the best measure of farm tax burden, Figure 3. Payments must come from income or from capital. Since continued payment from the latter would result in the drying up of the source of taxes, it must follow that a tax system should be so regulated as to exact only that portion from income which will leave the future tax paying ability unimpaired. What is the present situation in Ohio? How high are present farm taxes in terms of income?

SOURCES OF DATA

Data relative to the total property taxes paid by Ohio farmers were derived from the Annual Reports of The Ohio Tax Commission; supplementary information was obtained from the records of county taxing officials; data on total income were derived from the recently published bulletin by V. R. Wertz, Estimated Income from the Ohio Agricultural Industry; information on cash rents was assembled from reports of the local aids of the Federal-State Division of Crop and Livestock Estimates. These reports were supplemented by information collected by personal interview and mailed questionnaire to ascertain better the relationship of taxes and net rent in various areas of the State. Account records kept by farm operators in cooperation with the Department of Rural Economics of The Ohio State University have been analyzed to obtain data relative to taxes and income on owner-operated farms. Other sources, as used, have been annotated in the text.

THE ESTIMATED TOTAL AGRICULTURAL INCOME OF OHIO COMPARED WITH TOTAL TAXES PAID[1]

Prices and taxes have been compared above. Attention is now directed to income, the product of price times quantity. The estimated total income from Ohio's agriculture has remained near the same level since 1921, Table 2. To be sure, annual fluctuations have occurred, but these have resulted from minor price changes and variations in production mainly attributable to weather, Figure 3.

In column 4 of Table 2, the estimated total net agricultural income from all farms in Ohio has been shown. This is composed of (1) the net cash income realized from sales after cash farm operating expenses were deducted, but not including any deductions for interest on capital either owned or borrowed; (2) the value of home-produced food and fuel; and (3) the rental value of the farm home. Reduced to a per farm basis this total net agricultural income, before taxes were paid, was approximately $2000 in 1920, $1400 in 1925, and $1200 in 1928. From these amounts would come taxes, wages of management, and labor for the farmer and family for farm operations, and the interest for the use of the capital invested. Income in the last year mentioned was abnormally low due to some unfavorable crop conditions.

[1]This estimated total agricultural income is the total cash income from all farms in Ohio. Thus the total agricultural industry for the present comparison is considered one unit. A further limitation may be mentioned. Sales of agricultural products from one farmer to another are not included as these would tend to pyramid the total cash income values. Also, income from outside sources, as from investments or part time labor in non-agricultural industries, is not included. Thus, the estimated total cash income is the income from agriculture and not the total income of the agricultural population.

TABLE 2.—Estimated Total Gross Cash, Net Cash, and Total Net Agricultural Income in Ohio Before Paying Taxes, 1920 to 1928*

(In thousands of dollars, i. e. 000 omitted)

Year	Total gross cash income† (1)	Net cash income (taxes not deducted) (2)	Value of home-produced food, fuel, and house rent (3)	Total net income (i. e. 2+3) before paying taxes (4)
1920	520,077	366,284	164,756	531,041
1921	295,827	187,345	124,972	312,317
1922	294,251	184,599	123,697	308,296
1923	326,820	211,928	129,715	341,643
1924	327,352	216,361	121,439	337,800
1925	351,643	218,024	130,068	348,092
1926	373,883	236,504	129,729	366,233
1927	350,595	203,642	127,980	331,622
1928	319,844	170,327	123,051	293,378

Data on income derived from Estimated Income from the Ohio Agricultural Industry, by V. R. Wertz, Ohio Agricultural Experiment Station, Bulletin 450, with the exception of house rent which was given an estimated value of $200 per farm per year.

†Does not include sales from one farmer to another, i. e. exchange of goods within the industry, nor income from investments or from outside labor such as work on roads, in mines, etc.

An estimate of certain taxes paid by farmers has been made in Table 3. These do not cover the total indirect tax payments of the farm population. Only the more obvious contributions for the support of state and local government have been included. Shifting of taxes from one group of the population to another, through the medium of prices of commodities exchanged makes impossible the allocation of the final incidence of many taxes. At least in the

TABLE 3.—An Estimate of Certain Taxes Paid by Ohio Farmers, 1920 to 1928

(In thousands of dollars, i. e. 000 omitted)

Year	Uniform rate property tax* (1)	Special assessments on farm real estate† (2)	Motor vehicle and motor fuel taxes‡ (3)	Inheritance tax§ (4)	Fees collected by county officers§ (5)	Dog and kennel tax§ (6)	Total (7)
1920	31,051	2,170	1,030	171	358	64	34,844
1921	35,757	2,199	1,472	523	334	63	40,348
1922	34,780	2,666	1,508	531	405	68	39,958
1923	36,055	3,285	1,597	461	406	72	41,876
1924	36,536	4,038	2,685	488	408	82	44,237
1925	38,359	4,387	3,847	632	428	83	47,736
1926	38,359	5,005	4,463	636	446	99	49,008
1927	38,939	5,590	5,642	938	463	89	51,661
1928	39,436	6,407	6,600	767	480	135	53,825

*Real estate tax 1924 was estimated from the total area in farms, the average tax valuation per acre, and the average rural tax rate. Personal property on farms was estimated as 23 per cent of the total valuation. Taxes in other years were obtained by applying the Ohio index of farm taxes.

†County special assessments on farms were estimated as one half of all county special assessments. All township special assessments were assumed to be on farm real estate.

‡Estimated from the number of farm-owned motor vehicles reported in the 1920 census and weighted in the various years by the estimated farm population ratio to total population.

§Estimated on a per capita basis. The trend in farm population shown in the 1920-25 census enumerations was used to estimate the farm population in the various years. The ratio which existed between this estimated farm population and the total population was applied to the total of the various taxes paid in the State.

period covered by this table the possibility of shifting a part of the farm tax burden to the consumers of farm products has been negligible. The chronic condition of agricultural overproduction would forestall any such tendency. On the other hand, it is probable that a part of the taxes levied on other industries and on transportation has final incidence on the farm population through the prices of non-agricultural commodities bought. Therefore, Table 3 contains only the more obvious payments made by farmers for the support of government and is, by no means, a full statement of the total tax burden of the farm population.

An estimate has been made in Table 4 of the percentage of the agricultural income of Ohio required to pay the taxes listed in the table just preceding. Property taxes and assessments combined averaged, from 1921 to 1928, 12.60 per cent of the gross cash income, 20.57 per cent of the net cash income, i. e., the income after cash farm operating expenses other than taxes had been deducted, and 12.62 per cent of the total net agricultural income.

TABLE 4.—An Estimate of the Percentage Relationship of Total Agricultural Income and Taxes Paid by Farmers, 1920 to 1928

Year	Percentage which property taxes and assessments were of—			*Percentage which all taxes accounted for were of—		
	Gross cash income (1)	Net cash income (2)	Total net income (3)	Gross cash income (4)	Net cash income (5)	Total net income (6)
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
1920	6.39	9.07	6.26	6.70	9.51	6.56
1921	12.83	20.26	12.15	13.64	21.54	12.92
1922	12.73	20.29	12.15	13.58	21.65	12.96
1923	12.04	18.56	11.51	12.81	19.76	12.26
1924	12.39	18.75	12.01	13.51	20.45	13.10
1925	12.16	19.61	12.28	13.58	21.90	13.71
1926	11.59	18.34	11.84	13.11	20.72	13.38
1927	12.70	21.87	13.43	14.74	25.37	15.58
1928	14.33	26.91	15.63	16.83	31.60	18.35

*See Table 3 for estimate of the principal taxes paid by farmers.

Motor vehicle and motor fuel taxes[1] have produced large sums of revenue which otherwise, probably, would have been collected through property taxes and assessments to meet the demand for improved roads. As a matter of course, the farm population has paid a share of the taxes on motor transportation. Other direct and indirect public revenue payments made by farmers are of only secondary importance as compared with property taxes and motor transportation taxes. The total of all these public revenue payments as estimated was, in 1921 to 1928, equal to an average of

[1]The assumption was taken herein that motor fuel taxes are completely shifted to the consumer.

13.98 per cent of the gross cash income, to 22.87 per cent of the net cash income, and to 14.02 per cent of the total net income from agriculture. That the above averages would be slightly low for recent years is suggested by the data for 1927 and 1928 when the total taxes were equal to approximately one sixth of the gross cash income, over one fourth of the net cash income, and one sixth of the net income from agriculture.

Farmers are recipients of certain items of income from non-agricultural sources. Receipts from mineral leases and royalties, occasional labor away from the farm, and similar sources of income increased the cash receipts of those farmers from whom accounts were available, an average of approximately $150 for each farm operator in 1928[1]. Assuming that this amount was earned from non-agricultural sources by every farmer in Ohio, total net income would be increased approximately $36,000,000. On this basis tax payments accounted for in 1928 would be equal to 18.35 per cent of the total net income accounted, Table 4.

The net cash income probably represents the most useful comparison with farm taxes because it is from the net cash income, as computed, that taxes would be paid. However, the fact should not be ignored that the farm yields income in kind as well as cash.

RELATION OF TAXES TO INCOME FROM FARM REAL ESTATE

Separation of income on owner-operated farms into the appropriate divisions attributable to labor, management, and capital investment is largely an arbitrary calculation. It is probable that a more definite conclusion as to the income which should be credited to the real estate investment might be obtained from cash-rented farms[2] where, presumably, the owner receives a certain stipulated sum for which he surrenders the details of management, and the occupancy of the farm to another party, the tenant. Even on cash-rented farms the net income from the real estate must be estimated

[1]Data supplied by J. I. Falconer.

[2]Method used to obtain the estimated net rent and taxes on cash-rented farms, 1923 to 1928. Cash rent per acre of farms and the value per acre of such farms are reported annually to the Federal-State Bureau of Crop and Livestock Estimates, through local correspondents. These reports were assembled in four districts for the present analysis. The ratio of tax valuation to sale price, of farm real estate, which has been found to exist in each of these districts for the various years, was applied to obtain the estimated tax valuation of cash-rented farms. The valuation so obtained was slightly higher than the average tax valuation of all farm real estate in these districts. However, this higher value of cash-rented farms as compared with the value of all farms is likewise indicated by the 1925 census values which were: cash-rented farms $99.88 per acre, and all farms $87.67 per acre. It should follow that the tax valuation and real estate tax of cash-rented farms should be slightly higher than the average valuation and tax of all farms. For instance, in 1926 the estimated real estate tax per acre on cash-rented farms was $1.44 as compared with an average for all farm land in 88 rural townships of $1.27 per acre. Data on expenses paid by owners of cash-rented farms were collected by survey and by mailed questionnaire to supplement and corroborate the information from other sources.

to some degree; for depreciation of buildings, fences, and tile drains, and the depletion of fertility are expenses which over a long period of time are vitally important; yet, the annual charge for these items which should be made against the gross income is impossible of exact calculations. The nearest approach to accuracy which was possible has been to deduct a customary charge for depreciation and repairs,[1] leaving the question of soil depletion entirely out of the calculation.

Exact uniformity of practice does not prevail as regards the obligations of land lord and cash tenant in the assumption of certain items of expense. Ordinarily, the land lord pays the real estate taxes and building insurance, and must stand the depreciation and repair of buildings, fences, and drainage systems. Grass seed, fertilizer and lime are, in a few instances, paid for by the land lord on a cash-rented farm but usually by the tenant. Obviously, if more expense were assumed by the tenant in any given case, the cash-rent paid would be lowered proportionately.

TABLE 5.—Estimated Ratio of Tax Expense to Real Estate Value on Cash-Rented Farms, 1923 to 1928

(Value=100)

District	1923	1924	1925	1926	1927	1928
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Per cent*
Northwest	1.30	1.41	1.46	1.42	1.60	1.70
Northeast	1.47	1.59	1.60	1.80	1.75	1.91
Southeast	1.57	1.66	1.70	1.62	1.79	1.92
Southwest	1.52	1.52	1.52	1.61	1.64	1.71
State	1.38	1.42	1.44	1.45	1.55	1.81

Tax valuations of cash-rented farms were estimated by applying the tax valuation-sales price ratio of farm real estate, in the various years and areas, to the value of cash-rented farms as reported by crop correspondents. The average tax rates existing in the various areas were calculated from the annual reports of the Ohio Tax Commission.

Ratio of tax expense to the estimated value of cash-rented farms.—Rural real estate values declined during the decade of 1920 to 1930. On the other hand, tax valuations remained at about the same level and tax rates generally increased. The resulting ratio of tax expense to value of cash-rented farms showed an increase in the State from 1.38 to 1.81 per cent from 1923 to 1928. Table 5 shows how these increases varied somewhat in different parts of the State. These percentages would be the equivalent of the true tax rates imposed on the real estate. As compared with the actual

[1]Depreciation and repair expense on buildings were calculated at 5 per cent of the tax valuation of buildings. This would be approximately 4 per cent on full present valuation. It was assumed that the buildings had already depreciated an average of one half of the original value. Fences were depreciated on the basis of 15 years, an average cost of $1.25 per rod, and number of rods per farm. Other expenses of land lords were calculated from actual annual expenditures.

tax rates they are only slightly lower. The average rural tax rate in Ohio for 1927, i. e., the rate applying to collections made in 1928, was 18.429 mills per dollar or 1.8429 per cent when expressed in the terms given in Table 5.

Relation of tax expense to gross rent on cash-rented farms.—From 1923 to 1928 a slight general decline in cash-rent per acre occurred. This tended to cause some rise in the ratio of taxes to gross income although the ratio of change was much less than the change in ratio of tax expense to land value. The state average ratio of taxes to cash rent was 24.04 per cent in 1923 and 27.82 per cent in 1928. These averages are fairly representative of all sections except northeastern Ohio, where 29.65 per cent of the cash rent was needed for taxes in 1923 and 34.75 per cent in 1928.

Relation of taxes to net rent.—It has been previously emphasized that only an estimation of some items of annual expense is possible. A too conservative charge for depreciation might cause the cash rent paid for a farm to appear ample and a too large depreciation charge would reduce the net rent to an unreasonably low return on the investment. As a State average, income to the land lord was reduced 27.62 per cent in 1928 by depreciation and charges, other than taxes, paid by the land lord. After paying these charges the State average net rent was less than three times the real estate tax levied against the property. Comparison of the various districts (Table 6) would indicate that the ratio of taxes to net rent has been much higher in the northeast than in other sections of the State. This condition was produced mainly by a combination of the depreciation charge for a large building investment in the northeast dairy section, a medium cash rent, and relatively high tax.

TABLE 6.—Estimated Relationship of Real Estate Taxes to the Average Rent of Farms in Various Areas, 1928

Area*	Per acre				Percentage of net rent required for taxes
	Cash rent	Land owner's expenses other than taxes	Net rent before paying taxes	Tax expense	
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Per cent*
Northwestern Ohio	6.01	1.69	4.32	1.58	36.57
Northeastern Ohio	4.46	1.92	2.54	1.55	61.02
Southeastern Ohio	3.52	.70	2.82	.89	31.56
Southwestern Ohio	5.83	1.66	4.17	1.57	37.65
State†	5.14	1.42	3.72	1.43	38.44

*See Figure 2 for the territorial limits of these areas.

†State averages derived from aggregate values not from district averages. This gives equal weight to each separate report. Of these reports there were: N. W. Ohio, 73; N. E. Ohio, 37; S. E. Ohio, 74; S. W. Ohio, 56. Weighting rental values by area in farms in each district gives a tax-net rent ratio of 38.57 for the State.

Cash rents in the southeast section naturally averaged lowest of the four areas on account of the relatively large proportion of low quality land; however, the expenses of depreciation and maintenance were enough lower to result in a tax-net rent ratio which averaged slightly lower than that which prevailed in the northwest and southwest.

TABLE 7.—Estimated Relationship of Real Estate Taxes and Owner's Income on Cash-Rented Farms, Ohio, 1900 to 1928

Year	Dollars per acre				Percentage of net rent required for taxes
	Cash rent	Land owner's expenses other than taxes	Net rent before paying taxes	Tax expense	
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Per cent*
1900	3.16	.76	2.40	.41	17.08
1901	3.27	.74	2.53	.40	15.81
1902	3.25	.78	2.47	.39	15.79
1903	3.27	.80	2.47	.45	18.22
1904	3.28	.80	2.48	.45	18.15
1905	3.32	.80	2.52	.47	18.65
1906	3.34	.83	2.51	.50	19.92
1907	3.44	.89	2.55	.51	20.00
1908	3.47	.84	2.63	.56	21.29
1909	3.52	.91	2.61	.57	21.84
1910	3.65	.94	2.71	.57	21.03
1911	3.72	.86	2.86	.52	18.18
1912	3.78	.91	2.87	.55	19.16
1913	3.80	.91	2.89	.60	20.76
1914	4.01	.92	3.09	.61	19.74
1915	4.11	.97	3.14	.79	25.16
1916	4.12	1.12	3.00	.77	25.67
1917	4.24	1.37	2.87	.78	27.18
1918	4.62	1.62	3.00	.85	28.33
1919	4.82	1.87	2.95	1 02	34.58
1920	5.11	1.87	3.24	1.18	26.42
1921	4.60	1.42	3.28	1.29	39.33
1922	5.00	1.38	3.62	1.26	34.81
1923	5.45	1.39	4.06	1.31	32.27
1924	5.31	1.40	3.91	1.32	33.76
1925	5.11	1.45	3.66	1 39	37.98
1926	5.08	1.42	3.66	1.39	37.98
1927	5.16	1.40	3.76	1.41	37.50
1928	5.14	1.42	3.72	1.43	38.44

Table 7 has been constructed to show the average relationship of taxes to the net rent realized on cash-rented farms from 1900 to 1928.[1] Changes in the general price level in these twenty-nine years have effected some change in the cash rents, in expenses connected with maintenance of the real estate and also in taxes paid. But the last column of this table, showing the percentage of net

[1]Cash rent values 1920 to 1928 based on crop reporter's estimates; 1900 to 1920 derived from Relation of Land Income to Land Value, U. S. D. A. Bulletin 1224, by C. R. Chambers. Landlords' expenses, 1928, obtained by questionnaire; other years estimated by applying the U. S. Bureau of Labor price index of non-agricultural products to the 1928 expenses. Taxes were estimated for 1928 from: (1) crop reporters estimates of value of cash-rented farms, (2) ratio of assessed to true value of farm real estate, and (3) average tax rate on Ohio farms. Taxes for other years were estimated by applying the index of Ohio farm taxes to the 1928 tax per acre.

rent required to pay the real estate taxes, indicates that the expansion of tax expense has considerably exceeded the rise in prices. While only 17.08 per cent of the estimated net rent was required to pay taxes in 1900, the relative amount had increased to 38.44 per cent of the estimated net rent in 1928.

Through the rise in taxes it may be said that the government's share in the net income has more than doubled in these twenty-nine years. Land prices are the capitalization of the present and anticipated net income. Comparison of the foregoing data with land values emphasizes the importance which taxation may have on the equity of private ownership in land.

The average per acre value of farm real estate was $42.31[1] in 1900 and $75.61[2] in 1928. Using the percentage of net rent realized by the owner and the percentage needed to pay taxes as a basis for division, the distribution of the total farm real estate values would be:

	1900	1928
Capitalized private interest	$42.31	$75.61
Capitalized public interest	8.71	47.21
Total value per acre	$51.02	$122.82

The above total values per acre would be equal to a capitalization of the net rent before paying taxes, at the rate of 4.70 per cent in 1900 and 3.03 per cent in 1928.

Variation in the ratio of real estate taxes to cash rent.—Cash rents on the group of farms assembled in Table 8 averaged somewhat lower than the rents shown in Table 6. This latter group of data was collected by mailed questionnaire and the opinion might be justified that some bias may have resulted from the possible tendency for land owners to be more likely to answer such questions relative to income and taxes if their income is being affected by taxation in an unusual degree. Nevertheless, this information is of value to illustrate the range of variation which exists in the ratio of taxes to cash rent on different farms. On a few farms less than 20 per cent of the cash rent would pay the real estate taxes; on others approximately 100 per cent was needed. The median point was at 35.05 per cent. On 98 of these farms information was given on all the maintenance expenses paid by the land owner. Real estate taxes averaged 52 per cent of the net rent remaining after other expenses were paid. This is approximately 14 per cent higher than the average given in Table 6.

[1]The United States Census of Agriculture, 1900.
[2]Farm Real Estate Values in Ohio, by H. R Moore, Ohio Agricultural Experiment Station, Department of Rural Economics, Mimeographed Bulletin 15.

TABLE 8.—Frequency Distribution of Individual Farms When Classified According to the Percentage of Cash Rent Required for Taxes, 1927-1928

Percentage of cash rent required for real estate taxes	Number of farms		Percentage of farms	
	In each group	Cumulative	In each group	Cumulative
15–19.99	6	6	4.20	4.20
20–24.99	22	28	15.38	19.58
25–29.99	27	55	18.88	38.46
30–34.99	16	71	11.19	49.65
35–39.99	16	87	11.19	60.84
40–44.99	19	106	13.28	74.12
45–49.99	8	114	5.59	79.71
50–54.99	8	122	5.59	85.30
55–59.99	4	126	2.80	88.10
60–64.99	3	129	2.10	90.20
65–69.99	5	134	3.50	93.70
70–74.99	1	135	.70	94.40
75–79.99	3	138	2.10	96.50
80–84.99	2	140	1.40	97.90
85–89.99	1	141	.70	98.60
90–94.99	1	142	.70	99.30
95–99.99				
100 or more	1	143	.70	100.00
Total	143		100.00	

CAPITAL AND INCOME ON SELECTED OWNER-OPERATED FARMS COMPARED WITH FARM TAXES

On owner-operated farms, which represent 74 per cent[1] of all farms in Ohio, the incomes from property and labor are closely merged, for the farm owner is the farm operator, performing the labor of management and also much of the manual labor. Therefore, the majority of farmers are affected by the farm tax in its relation to their aggregate income from all sources.

An analysis of 2627 farm account records kept by Ohio farmers from 1914 to 1927 has been made in the following pages. The data indicate that the average tax expense per acre on farms where account records have been kept, in cooperation with the Agricultural Extension Service, would be very nearly typical for all farms in the State. This is supported by data assembled from another source. The total uniform-rate taxes paid in 88 rural townships, one in each county, averaged $1.67 per acre in 1927. As compared with this, the 1924 to 1927 average tax expense, on farms where records were kept was $1.81 per acre. Farm account records have included special assessments in the tax expense which would add approximately 10 per cent to the uniform-rate taxes. This would seem to justify the opinion that the tax expense per acre indicated in farm account records is fairly typical of the average for all

[1]1925 Census of Agriculture.

farms. On the other hand, that the average income of farmers keeping account records is above the average income of all farmers is most evident. For instance, the average gross cash income for all farms in Ohio estimated from the study by V. R. Wertz, was slightly less than $16.00 per acre from 1923 to 1927; for the same period, the group of account keepers averaged nearly $28.00 per acre gross cash income. In the same period the net cash income of all farms averaged slightly less than $10.00 per acre;[1] that of account keepers a little under $16.00 per acre. It would appear that the rather selective group keeping farm accounts would carry a lighter tax burden, as measured by income, than the total group of Ohio farmers. Therefore, the comparisons in the following pages between the farm business and the farm tax will tend to be a too conservative estimate of the farm tax burden. However, these data do show the trend in the relationship of taxes to the farm business, and furthermore sufficient differences occur between individual farm records to demonstrate clearly the wide range of variation in tax burden existing on the individual farms within the industry.

TABLE 9.—Relationship of Property Taxes to the Farm Business;* 933 Annual Records on Ohio Farms of the Period 1924 to 1927

	Per farm	Per acre	Percentage relationship of taxes
	Dollars	*Dollars*	*Per cent*
Property taxes	239	1.81	.....
Capital investment	16,663	126.00	1.43
Gross cash income†	3,666	27.77	6.50
Net cash income‡	2,006	15.20	11.81
Farm income§	2,080	15.76	11.49
Labor income**	1,413	10.70	16.91

*All income data are before tax expense was deducted.

†Gross cash income: cash receipts from sales plus miscellaneous income as from outside labor or sales of old machinery, etc.

‡Net cash income: gross cash income less cash expenses. Annual depreciation on buildings and machinery was charged in place of repairs or first costs.

§Farm income: net cash income plus or minus changes in inventory of farm personal property.

**Labor income: farm income less 4 per cent interest on the capital investment.

In Table 9 is presented an analysis of account records kept by Ohio farmers in the period 1924 to 1927 inclusive. Records have been available from some farms over a period of years. But in part the identity of the group of farms from which records were obtained has changed from year to year.

The ratio of farm taxes to capital investment on the group of farms shown in Table 9 was 1.43 per cent. This might be considered to be the approximate true tax rate paid on the property of

[1]Before taxes were paid. Net cash income figures stated here contain allowance for non-agricultural income of farm operators which was estimated at $150 per farm.

these farms where records were kept. One discrepancy involved would be the fact that the farm investment as given covers only the property used in production. Household furnishings, and intangibles would be excluded; but these items are not of great average importance. However, a valuable inference can be drawn. The conclusion generally prevails that farm taxation at present is an excessive burden on agriculture. Apparently, this excessive burden exists when a true tax rate of slightly under 1.5 per cent is levied on the capital value of the physical wealth engaged in agriculture. This true rate of 1.5 per cent is the equivalent of 15 mills on each dollar of the tax base, the present tax rate limitation in operation in Ohio. The next question which arises is a question with no categorical answer. What rate of taxation on agricultural wealth would be equitable at the present level and present distribution of farm income? Attention is again called to the evident fact that the farms under discussion are among the most successfully operated in Ohio.

The net cash income as calculated in Table 9 is the gross cash income less cash farm expenses, excepting expenditures for construction or repair of buildings and purchases of machinery. An annual depreciation charge on buildings and machinery was made on the individual farm records to account for these items. The percentage of net cash income needed to pay taxes on these farms was 11.81 per cent in 1924 to 1927 inclusive.

These data would indicate that this selected group of farmers have paid in the years 1924 to 1927 an average of one dollar in property taxes out of each fifteen of gross cash income, or one dollar in taxes out of each eight of their net cash income. As compared with these amounts the total agricultural industry of Ohio, in the same period, paid one dollar in property taxes out of each eight of gross cash income or one dollar in taxes out of each five net cash income.

Farm income is net cash income plus or minus changes in inventory of farm personal property. Thus, farm income differs from the net cash income in that the latter does not contain any adjustment in capital values due to changes in price or volume of farm personal property owned. Tax expense averaged 11.49 per cent of the farm income on this group of farms in 1924 to 1927 as compared with 11.81 per cent of the net cash income. There was a slight tendency to increase the size of the individual farm business in most sections of Ohio during this period which would seem to account for the fact that the farm income averaged slightly higher than the net cash income.

Farm income is subject to further division into return on capital invested and return on labor of the operator. An annual charge of 4 per cent interest on all the capital invested in the farm business has been deducted from the farm income and the remainder designated as labor income. After deducting this standard charge of 4 per cent for capital, the labor income on these 933 farms was equal to $10.79 per acre in the period 1924 to 1927, and property taxes were equal to 16.77 per cent of this amount.

ESTIMATED FARM PROFITS COMPARED WITH TAXES

In the following calculations an estimated price has been given to everything produced on the farm and likewise a price to all labor and capital used to produce such income. First, was a profit shown by the average of the 933 farm records discussed above? If house rent and farm-supplied food and fuel were added to the farm income the resulting aggregate would be the total income from the farm both in cash and in kind. The income side of the statement would be: the farm income ($2080), plus food and fuel produced and used on the farm ($322),[1] plus use of the farm home ($200) would equal a total income of $2602. The expense side would be: interest on capital at 4 per cent ($667), plus charges for the operator's labor ($750), plus family labor[2] ($322) equalling a total expense of $1739. Income ($2602), less expenses ($1727), left a profit of $863 before taxes were paid. Taxes ($239) were equal to 27.69 per cent of the profit thus computed. The above would not be applicable to all farms in Ohio. But perhaps it is desirable to show how this group of farmers have met a rather adverse situation with a fair degree of success.

A similar accounting for the average of all Ohio farms could not be expected to show a similar profit over a period of years. The following calculation based on the estimated average of all Ohio farms in 1924 to 1928 demonstrates the point.[1] On the income side of the equation would be: net agricultural cash income before paying taxes ($834), plus earnings for labor away from the farm and such miscellaneous income ($150), plus use of the farm home ($200), plus food and fuel produced and used on the farm[1] ($322) equalling a total income of $1506. On the expense side would be: 4 per cent interest on the farm investment ($366),[3] plus operator's labor ($750), plus family labor ($322)[2] equalling a total expense of

[1]Based on Estimated Income From the Ohio Agricultural Industry, p. 8, Table 3.

[2]Family labor, other than operator's labor, estimated as equal to home-produced food and fuel, $322

[3]Four per cent on $9,141, the 1925 average census value per farm.

Fig. 4.—Map of Ohio. Data from the four district areas in the above map have been analyzed separately to show more accurately the relationships of farm taxes to the wealth and income in different parts of the State.

$1435. Profit before paying taxes was $68. Reducing the operator's wage to $654 would leave a sum sufficient to pay the tax of $164. Different assumptions might be made relative to wage rates, value of farm-supplied food, fuel, and house rent. The foregoing can serve merely to demonstrate what the approximate relationship of property taxes to the income from the average farm would be if a market price were assumed for all items of cost and income.

THE RELATION OF PROPERTY TAXES TO THE FARM BUSINESS ON SELECTED FARMS IN FOUR AREAS

Types of farming in various parts of Ohio do not always differ greatly; yet there are sufficient sectional tendencies to suggest that some variation in the average relationship of the farm tax to the farm business might occur in different localities. This is suggested by variations in land values, by the ratio of real estate to personal property, by size of farm incomes, by size of the farm tax, by the percentage of land in crops, and by similar factors of the farm business which do vary in an appreciable degree in the different localities. Figure 4 shows the four areas for which data have been assembled separately. Table 10 shows a grouping of farm records by districts. These records are the same as were previously discussed for the State as a unit and so the same limitations exist in this table as were previously mentioned.

Table 10 shows as an average proposition that farms in eastern Ohio and particularly northeastern Ohio have a somewhat heavier tax to pay in terms of income than the farms in the western half of the State. The same condition holds for capital.

VARIATION BETWEEN INDIVIDUAL FARMS IN THE PERCENTAGE OF FARM INCOME REQUIRED TO PAY PROPERTY TAXES

It will be recalled that farm income is net cash income plus or minus changes in inventory of farm personal property. Analysis has already been made to show the average relationship of farm taxes to farm income. Such averages can only be roughly representative of individual farms. Therefore, Tables 11 and 12 have been assembled to show the degree of variation in the relationship of farm taxes to the farm income on individual farms. Individual farm account records were grouped in classes. The first class contained those farms where less than 5 per cent of the farm income was required for taxes; the second class, those farms where 5 to 9.99 per cent of the farm income was required for taxes and so on

TABLE 10.—Relationship of Property Taxes to the Farm Business in Four Sections*: Annual Records of the Period 1924 to 1927

	Northwestern Ohio, 378 records			Northeastern Ohio, 87 records			Southeastern Ohio, 205 records			Southwestern Ohio, 263 records		
	Per farm	Per acre	Percentage relationship of taxes	Per farm	Per acre	Percentage relationship of taxes	Per farm	Per acre	Percentage relationship of taxes	Per farm	Per acre	Percentage relationship of taxes
	Dol.	*Dol.*	*Per cent*	*Dol.*	*Dol.*	*Per cent*	*Dol.*	*Dol.*	*Per cent*	*Dol.*	*Dol.*	*Per cent*
Property taxes	244	2.07	.....	230	2.02	.....	180	1.23	.....	276	1.89	.....
Capital investment	17,252	147.00	1.42	14,275	126.00	1.61	11,224	77.00	1.60	20,847	142.00	1.33
Gross cash income†	3,686	31.24	6.64	3,548	31.12	6.49	2,694	18.45	6.67	4,402	30.15	6.27
Net cash income†	2,031	17.21	12.02	1,801	15.80	12.78	1,425	9.76	12.60	2,457	16.83	11.23
Farm income†	2,164	18.34	11.28	1,780	15.61	12.94	1,478	10.12	12.15	2,510	17.19	10.99
Labor income†	1,512	12.81	16.16	1,210	10.61	19.04	1,029	7.05	17.45	1,679	11.50	16.43

*All income data are before taxes were deducted.
†See foot note, Table 9 for definition.

in five number intervals until the twenty-first class contained those farms where 100 per cent or more of the farm income was required to pay taxes.

TABLE 11.—Frequency Distribution of Individual Farms When Classified According to the Percentage of Farm Income Required for Taxes, 1914 to 1917

Class intervals (Percentage of farm income required for taxes)	Number of farms		Percentage of farms	
	In each group	Cumulative	In each group	Cumulative
Less than 5	101	101	16.97	16.97
5 to 9.99	302	403	50.74	67.71
10 to 14.99	99	502	16.63	84.34
15 to 19.99	28	530	4.69	89.03
20 to 24.99	15	545	2.52	91.55
25 to 29.99	11	556	1.85	93.40
30 to 34.99	7	563	1.19	94.59
35 to 39.99	3	566	.51	95.10
40 to 44.99	5	571	.85	95.95
45 to 49.99	2	573	.34	96.29
50 to 54.99	1	574	.17	96.46
55 to 59.99				
60 to 64.99	0			
65 to 69.99	1	575	.17	96.63
70 to 74.99	1	576	.17	96.80
75 to 79.99				
80 to 84.99	1	577	.17	96.97
85 to 89.99				
90 to 94.99	1	578	.17	97.14
95 to 99.99	1	579	.17	97.31
100 and over	16	595	2.69	100.00
Total	595		100.00	

First quartile	5.79 per cent
Median	8.25 per cent
Third quartile	12.18 per cent

Table 11 was assembled from farm accounts kept for some year in the period 1914 to 1917. Of these records 224 were for 1914, 286 for 1915, 21 for 1916, and 64 for 1917. Therefore, the data are mainly representative of the first two years before the war time price inflation was very significant. In the 1914 to 1917 period about one sixth of all cases paid less than 5 per cent of the farm income in taxes; about one half paid 5 to 9.99 per cent; and one sixth of all cases, 10 to 14.99 per cent. The remaining one sixth paid taxes which ranged from 15 to more than 100 per cent of the farm income. Obviously, even in that relatively prosperous period, some farm enterprises were in an unsatisfactory condition, which, in all probability, could not be related entirely to taxation, although the farm operators in such cases might consider taxes to be a very important factor.

Similar information for the period 1924 to 1927 has presented a slightly different picture although a higher relative tax payment was the most important difference. Only 3.62 per cent of the

farms paid less than 5 per cent of the farm income in taxes; one third, 5 to 9.99 per cent; one third, 10 to 14.99 per cent; and one sixth, 15 to 19.99 per cent. Again, about one sixth of all cases fell in the higher class groups sufficiently removed from the concentration of cases about the median point to indicate some abnormality

TABLE 12.—Frequency Distribution of Individual Farms When Classified According to the Percentage of the Farm Income Required for Taxes, 1924 to 1927

Class intervals (Percentage of farm income required for taxes)	Number of farms		Percentage of farms	
	In each group	Cumulative	In each group	Cumulative
Less than 5	34	34	3.62	3.62
5 to 9.99	305	339	32.55	36.17
10 to 14.99	306	645	32.66	68.83
15 to 19.99	147	792	15.69	84.52
20 to 24.99	48	840	5.12	89.64
25 to 29.99	32	872	3.41	93.05
30 to 34.99	16	888	1.71	94.76
35 to 39.99	10	898	1.07	95.83
40 to 44.99	10	908	1.07	96.90
45 to 49.99	4	912	.43	97.33
50 to 54.99	2	914	.21	97.54
55 to 59.99				
60 to 64.99	2	916	.21	97.75
65 to 69.99	2	918	.21	97.96
70 to 74.99	1	919	.11	98.07
75 to 79.99	3	922	.32	98.39
80 to 84.99	1	923	.11	98.50
85 to 89.99	2	925	.22	98.72
90 to 94.99	1	926	.11	98.83
95 to 99.99				
100 and over	11	937	1.17	100.00
Total	937		100.00	

First quartile	8.28 per cent
Median	11.63 per cent
Third quartile	16.96 per cent

in the ratio of taxes to income; but in the 1924 to 1927 group of records, 20 per cent was the lower interval limit of this so-called abnormal group, instead of 15 per cent as in the former period. The median and quartile points, shown in Tables 11 and 12, further summarize the tendencies mentioned above. Table 13 shows a similar classification of farm records by years from 1914 to 1927.

Figure 5 illustrates the variation between individual farms in the relationship of taxes and farm income in various years. Each vertical line represents the percentage of farm income needed to pay taxes on some particular farm. Similarly, Figure 6 has been inserted to show the relationship of property taxes to the labor income on individual farms in two periods, Table 14.

TABLE 13.—Frequency Distribution of Individual Farms When Classified According to the Percentage of Farm Income Required for Taxes, by Years, 1914 to 1927

Class intervals (Percentage of farm income required for taxes)	Percentage of farms falling in the various class groups in the given years													
	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
	Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*
Less than 5	12.06	13.68	33.33	43.75	32.45	25.66	4.57	1.09	.56	2.54	3.25	3.26	5.33	2.61
5 to 9.99	59.40	45.62	52.39	43.76	51.66	55.92	14.21	5.98	12.43	32.21	36.59	38.04	36.00	27.79
10 to 14.99	13.85	21.40	9.52	7.81	5.96	10.52	19.30	10.87	25.42	32.63	29.27	34.78	32.00	33.49
15 to 19.99	4.02	6.32	.....	1.56	3.31	3.95	12.70	9.79	19.78	13.14	12.20	15.22	13.68	18.29
20 to 24.99	2.23	3.16	.....	.....	.....	.66	10.15	8.15	10.17	8.05	5.69	3.26	4.33	5.94
25 to 29.99	1.78	2.46	.....	.....	1.99	.66	3.55	7.61	7.35	4.66	4.06	1.09	3.67	3.56
30 to 34.99	.89	1.40	4.76	.....	.....	.....	3.55	2.17	5.65	2.12	.81	1.09	1.33	2.38
35 to 39.99	.....	.70	.....	1.56	.66	.....	2.54	7.07	3.96	1.27	2.44	2.17	.....	1.19
40 to 44.99	1.34	.70	.....	.....	.66	.....	1.01	.54	2.26	.....	1.63	.....	1.00	1.19
45 to 49.99	.44	.35	.....	.....	.....	.....	1.52	4.35	1.69	.85	.....	.....	.....	.95
50 to 54.99	.44	.....	.....	.....	.66	.....	1.01	1.09	.56	.85	.....	.....	.....	.47
55 to 59.99	.....	.....	.....	.....	.....	.....	1.52	2.17	1.13	.42	.....	.....	.....	.....
60 to 64.99	.....	.....	.....	.....	.....	.....	.51	1.09	1.13	.....	.81	.....	.....	.24
65 to 69.99	.44	.....	.....	.....	.....	.....	.51	3.26	.....	.....	.81	.....	.....	.24
70 to 74.99	.44	.....	.....	.....	.....	.....	1.01	1.09	1.13	.42	.....	.....	.33	.....
75 to 79.99	.....	.....	.....	.....	.66	.....	1.01	.54	.....	.42	.....	.....	.33	.47
80 to 84.99	.44	.....	.....	.....	.....	.66	.51	1.63	.....	.....	.....	.....	.....	.24
85 to 89.99	.....	.....	.....	.....	.....	.....	1.01	.54	.....	.....	.81	.....	.....	.24
90 to 94.99	.....	.....	.....	1.56	.....	.....	.....	1.63	.....	.....	.....	.....	.33	.....
95 to 99.99	.....	.35	.....	.....	.....	.....	.....	.54	.....	.....	.....	.....	.....	.....
100 or more	2.23	3.86	.....	.....	1.99	1.97	19.81	28.80	6.78	.42	1.63	1.09	1.67	.71
Total (per cent)	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Total (number)	224	285	21	64	151	152	197	184	177	236	123	92	300	421
First quartile	6.09	6.24	3.75	2.85	3.85	4.87	11.61	18.61	12.36	8.49	7.97	7.86	7.73	9.03
Median	8.20	8.98	6.59	5.71	6.70	7.18	17.70	38.07	17.93	12.34	11.74	11.25	11.35	12.93
Third quartile	11.45	13.67	8.98	8.54	9.12	9.41	64.62	100+	29.52	17.90	17.42	14.84	15.61	18.04

As compared with 1914, the 1927 series of records have median and quartile points about one and one-half times as high. Inspection of this table will reveal the cyclical fluctuation in relationship of taxes and farm income which has been due principally to changes in the price level of farm products. These fluctuations should not be confused with the general or secular trend upward in farm taxes.

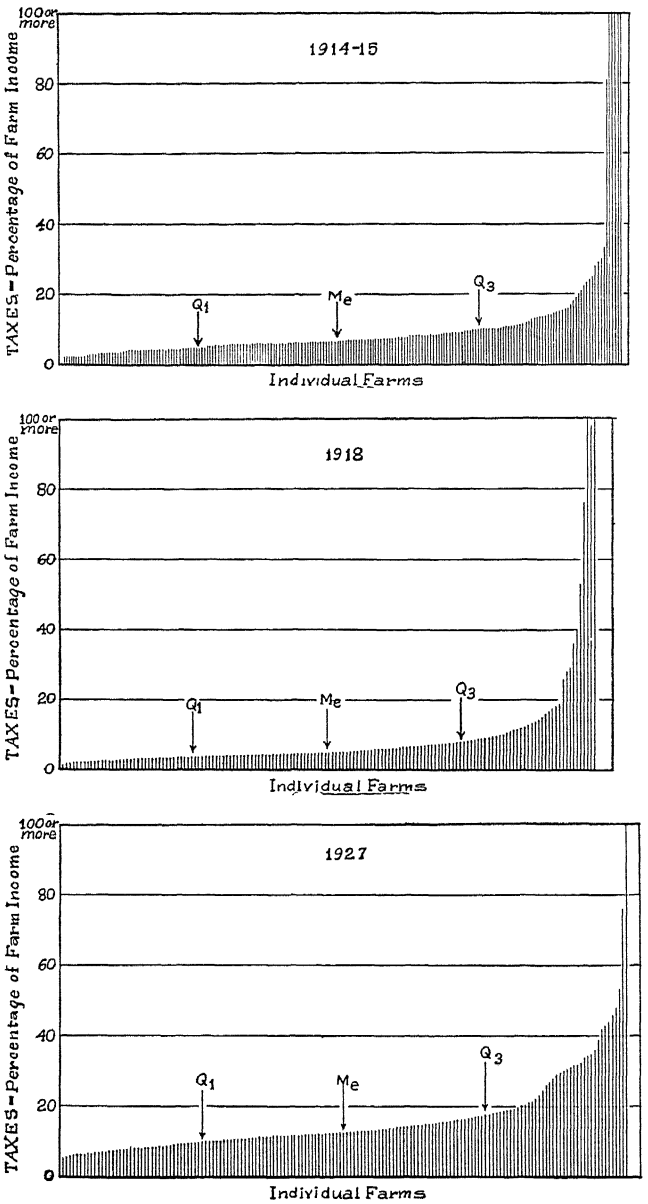

Fig. 5.—Percentage of farm income required to pay property taxes on individual farms, 1914-15, 1918, and 1927

PROPERTY TAXATION IS DISPROPORTIONATE ON DIFFERENT SIZED FARM INCOMES

Tax theory.—In the main, two theories lie back of the system of taxation. One is commonly called the benefit theory; the other, the faculty or ability theory. In the first theory, certain costs of government should be distributed according to the benefits received; while in the second theory every one should pay according to his ability. Current thought would give each of these theories

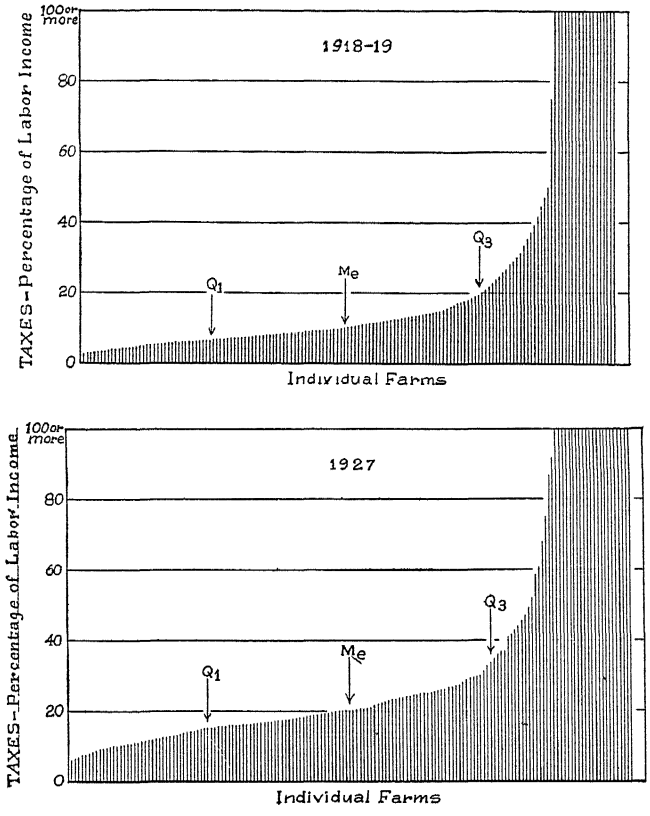

Fig. 6.—Percentage of labor income required to pay property taxes on individual farms, 1918-19 and 1927

a place in the tax system although in all cases or in any particular case both theories might be argued as, at least, partially fitting the situation. It is not the intention to present the arguments for these theories, but prevailing opinion seems to be that the greater part of our tax system should conform with approximate accuracy

to the theory of ability. Income is most often considered the fundamental measure of ability, but even here refinements must be applied and exceptions made which greatly complicate the application.

TABLE 14.—Frequency Distribution of Individual Farms When Classified According to the Percentage of Labor Income Required for Taxes in 1918, 1919, and 1927

Class intervals (Per cent required for taxes)	Number of farms		Percentage of farms	
	1918-19	1927	1918-19	1927
Less than 5	38		12.58	
5 to 9.99	114	9	37.75	5.63
10 to 14.99	52	26	17.22	16.25
15 to 19.99	25	36	8.28	22.50
20 to 24.99	10	25	3.31	15.63
25 to 29.99	9	17	2.98	10.63
30 to 34.99	5	6	1.66	3.75
35 to 39.99	6	5	1.99	3.13
40 to 44.99	1	4	.33	2.50
45 to 49.99	4	2	1.32	1.25
50 to 54.99		2		1.25
55 to 59.99		1		.62
60 to 64.99		1		.62
65 to 69.99		1		.62
70 to 74.99	2		.66	
75 to 79.99		1		.62
80 to 84.99				
85 to 89.99		1		.62
90 to 94.99				
95 to 99.99				
100 or more	36	23	11.92	14.38
Total	302	160	100.00	100.00
First quartile			6.64	16.44
Median			9.96	21.80
Third quartile			19.50	36.00

Formerly, property ownership was accepted as a fair measure of ability for almost the entire tax system but the economic fabric has become too complex to use this measure alone for the whole cross section of society. Much of the difficulty in the farm tax situation would appear to be due to the slow evolution of taxation methods in a time of rapid economic development. Farm property has been heavily taxed by fiscal machinery which has been inadequate to reach the newer forms of tax paying ability. The farmer whose income is dependent on a relatively large capital investment has perhaps been handicapped greatest by the slowness of tax reform. To the extent that the property tax does not fit changed conditions other measures are needed to reach tax paying ability. However, the usual opinion of the farm population seems to be that the property measure still fits rural conditions with fair satisfaction and might be made to fit better if property income were given more consideration in the methods of property assessment.

It should be pointed out that annual fluctuations in farm income on any one farm or group of farms are so great that it would be fiscally inexpedient in a small taxing district to anticipate and raise annually relatively fixed sums of revenue levied on the income base of each year. Perhaps an average of several years' income would serve as a fairly satisfactory base, or a greatly enlarged taxing district would accomplish the same purpose. But, even more expedient for the time being is the retention of the property base for the greater part of farm taxation with more attention being given to methods of valuation to the end that equality in terms of tax paying ability may be better attained.

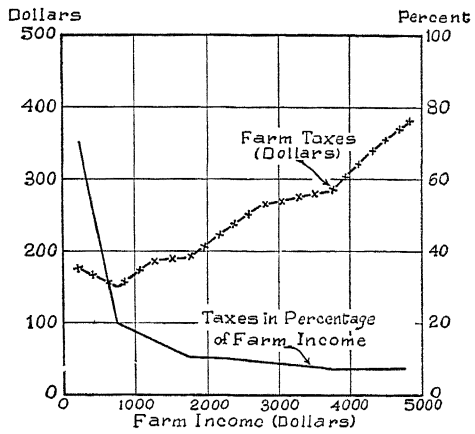

Fig. 7.—Taxes in dollars and in percentage of farm income on farms grouped according to size of farm income

To determine how well farm taxation has been correlated with tax paying ability as measured by farm income, over 700 farm records of 1926 and 1927 have been classified. When farms were grouped by size of farm income and compared with the tax payments an important point was demonstrated, Table 15. Taxes increased as the farm income increased but at a slower rate. To illustrate, the farms with an average farm income of $750 had an average tax of $150, while the farms with an income of $4250 had a tax of $335. Income increased five and two-thirds times while

TABLE 15.—Relation of Taxes to Farm Income on Individual Farms Grouped According to Size of Farm Income, 1926-1927

	Farm income (dollars)										
	Income a minus quantity	0 499	500 to 999	1000 to 1499	1500 to 1999	2000 to 2499	2500 to 2999	3000 to 3499	3500 to 3999	4000 to 4499	4500 or more
Number of farms	6	11	82	127	136	144	101	54	29	17	10
Average (median) tax per farm (dollars)	182	175	150	186	190	230	264	275	282	335	375
Average (median) percentage of farm income for taxes	.....	70	20	14.88	10.40	10.22	9.60	8.46	7.52	7.88	7.89

taxes increased two and one-fourth times. It would follow that as farm income increased a smaller percentage thereof was required to pay the farm tax. Farms where the income averaged $750 paid, from that sum, 20 per cent in taxes while less than 8 per cent of the income was required for taxes on farms averaging $3500 or more income. Obviously, as measured by farm income the general property tax has been highly recessive, on the lower income groups. In fact, so long as property value remains the principal tax base, farm taxation must be most burdensome on the low income groups. Figure 6 further illustrates this point. Apparently, the tax curve of percentage of farm income flattens out when farm income rises to $3500 or more.

ASSESSED VALUATION AND ESTIMATED TRUE VALUE OF VARIOUS KINDS OF FARM PROPERTY

The following data have been assembled to show the relative assessments of various types of farm property as they have existed in recent years and the relationship which these assessments have had to the market value or true value. The possibility of shifting the burden of taxation from or to farm property as opposed to non-farm property, through inequitable assessments, is conceded to be an ever present problem. Likewise, a similar problem of assessment may exist in the field of farm taxation alone. The part related to farm property alone has been considered herein.

TABLE 16.—Ratio of Tax Valuation to Sales Price of Farm Real Estate Sold Each Year, 1923 to 1928*

(Sales Price=100)

Year	State	District of State			
		Northwest	Northeast	Southeast	Southwest
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*
1923	77.45	74.66	73.52	77.95	83.67
1924	81.31	81.10	80.99	81.46	83.70
1925	82.27	82.97	80.85	81.58	83.68
1926	83.80	77.66	89.26	76.78	91.52
1927	84.17	84.85	81.74	82.08	88.02
1928	89.62	90.85	89.90	78.13	99.59
6-year average	83.10	82.01	82.71	79.66	88.36

*Values derived from a sample of sales data from twenty counties distributed over the State.

Table 16 shows the ratio of tax valuations to sale price of farm real estate calculated for the State and for the four separate districts shown in Figure 4. The market prices upon which this ratio is based were derived from so-called voluntary sales, where

both parties to each transaction were apparently in a position to bargain freely. These data indicate that as an average proposition the tax valuation of Ohio farm real estate was approximately 90 per cent of the sales price under favorable conditions in 1928. Due to the range in distribution of values, this would mean that probably 40 per cent of the individual tracts of property would be assessed at or above 100 per cent of the voluntary sale price in 1928. More will be said later of variations between individual assessments. The change from 77.45 per cent in 1923 to 89.62 per cent in 1928 was due to the decline in market price of farm real estate. In the various districts of the State this decline (Table 17) is partially obscured by random variations but the general tendency toward lower values is obvious in all districts except the Southeast where property values have been relatively constant.

TABLE 17.—Census and Tax Valuations of Livestock on Ohio Farms Compared*

Livestock	Valuation per head			Valuation per farm		
	Census	Tax	Tax as a percentage of census	Census	Tax	Tax as a percentage of census
	Dollars	*Dollars*	*Per cent*	*Dollars*	*Dollars*	*Per cent*
Horses and mules	79.83	63.49	83.73	216.25	190.48	88.08
Cattle	45.12	39.27	87.03	304.73	258.80	84.93
Sheep	9.52	7.23	75.94	75.53	78.30	103.66
Swine	10.37	12.17	117.35	100.35	82.28	81.99
Poultry	.95	.75	78.95	89.97	54.90	61.02
Total	.....	.....	.....	786.83	664.76	84.49

*Census values were derived from the 1925 census of agriculture. Tax values were derived from the individual assessments of 1029 farmers in ten counties, 1927.

Table 17 shows the census and tax valuation per head and per farm of various kinds of livestock in 1925 and the ratio of tax to census valuation. These ratios would indicate that this type of personal property was taxed at more than four fifths of its census valuation which was practically the same relation which existed in 1925 between the sale price and tax valuation of farm real estate. Other kinds of personal property on farms may not be returned for taxation so near the actual value as livestock which has a better established market price.

Divisions of farm property.—As valued for taxation, approximately 23 per cent of all farm property in Ohio is personal property and 77 per cent real estate. This 23 per cent includes all personal property used in the farm enterprise, household furniture, other tangible consumption goods on farms, and all intangibles declared

for taxation by farm residents. Likewise, property, on farms where farm account records were kept in 1923 to 1927, averaged 23 per cent personal property and 77 per cent real estate. But in this latter instance the personal property considered was only the property used in the farm enterprise and thus could be classed as productive property only. The inference from the above percentages would be that under-valuation of personal property on farms, as compared with farm real estate assessments, occurred in sufficient degree just to equal the non-productive consumption goods and intangibles not related to the collective farm business as a going enterprise. In 1029 farm personal property tax returns this so-called unproductive property was equal to 18.83 per cent of the personal property tax returned or 4.14 per cent of the total of all property returned by these farmers for taxation.

Real estate for purposes of assessment consists of land and buildings. The average assessed valuation of farm real estate in Ohio is 24 per cent buildings and 76 per cent land. As compared with this the 1925 census valuation was 33 per cent buildings and 67 per cent land. This would be evidence of the tendency toward a relatively higher valuation of land for taxation than buildings for taxation.

The result of the foregoing tendency has been, first, to shift a part of the property tax, which according to the uniform rule should have rested on personal property, to real estate; and second, to shift further a part of the real estate tax from buildings to the land. Thus the final tendency has been for the general property tax, as established and administered in Ohio, to rest finally on the land itself and through relatively lower valuations to exempt partially personal property and buildings. Or, to sum up further the tendency, it would appear that capital as distinguished from land has been able to escape the full impact of high tax rates to the disadvantage of the land.

This tendency measured quantitatively by use of the foregoing percentages (Table 18) would indicate that approximately 4 per cent of the total uniform property tax has been shifted to farm land through undervaluation of personal property, and further, through the relative undervaluation of buildings, another 5.6 per cent of the total uniform property tax has been shifted to the land making a total of 9.6 per cent thus shifted to land. The estimated true relative value of land alone is 48.9 per cent of all farm property. The 9.6 per cent is equal to 19.6 per cent of 48.9 per cent, which would mean that nearly one fifth of the tax on farm land has been

TABLE 18.—Relative Distribution of the Total Assessed and Estimated True Valuations of Property on Ohio Farms Betweer Personal Property, Buildings, and Land

Relative valuations	Personal property	Buildings	Land	Total
	Per cent	*Per cent*	*Per cent*	*Per cent*
Assessed valuations*.	23	18.5	58.5	100
Estimated true valuation†.	27	24.1	48.9	100
Variation of assessed from true valuation.	—4	—5.6	+9.6	

*Based on the distribution of farm property tax assessments in 88 rural townships, Annual Reports, the Ohio Tax Commission, 1926 and 1927.

†Estimated from the 1925 census of agriculture and the personal property tax returns of 1029 farm operators.

placed there through relative under-valuation of other types of property on farms or owned by farm residents. It is probable that high rates of taxation levied with attempted uniformity on all property tends finally to rest on land and thus reduce the net income and capital value of the land. The foregoing process of calculation should be construed as containing too many approximations to yield an exact conclusion. but the tendency can be demonstrated with fair definiteness.

Table 19 shows the personal property listed for taxation by 1029 farmers in ten counties in 1927. These are returns from purely rural taxing districts selected at random from approximately 150 townships. The purpose was to determine what distribution of value existed between the different types of personal property returned for taxation by persons operating farms.

The total average value before deduction of the statutory exemption of $100 was $1380. The percentage distribution of this amount for all the returns and for those from each county have been assembled in Table 19 for comparison. Of the average return from all counties livestock represented 50 per cent; farm machinery, 14 per cent; money and credits, 12 per cent; motor and other vehicles, 10 per cent: household goods and musical instruments, 10 per cent.

Table 20 has been constructed to show the distribution of the assessed values of personal property in the rural territory of ten counties. These data differ from those shown in the table just preceding in that no assurance can be given that the data in Table 20 are entirely on farms, or exactly typical of farm personal property assessments. As a matter of fact, considerable variation does occur in that Table 20 shows higher percentages in money and credits and correspondingly lower percentages in livestock and farm machinery. From the standpoint of property classification, it

TABLE 19.—Average Value and Percentage Distribution of the Personal Property Returned for Taxation by 1029 Farmers in Ten Counties, 1927

Classification	District and county										
	Northwestern Ohio			Northeastern Ohio		Southeastern Ohio			Southwestern Ohio		Ten counties
	Henry	Seneca	Van Wert	Ashtabula	Wayne	Adams	Carroll	Morgan	Butler	Union	Total or average
Number of returns	105	108	102	104	101	100	103	100	100	106	1029
Average value	$1380	$1430	$1420	$1200	$1730	$920	$1230	$1350	$1400	$1720	$1380
Class of property:	Percentage distribution of the average return										
Horses and mules	17	17	17	12	12	14	14	12	13	12	14
Cattle	14	13	15	36	23	17	23	14	20	15	19
Sheep	2	8	2	1	1	5	10	19	2	7	6
Hogs	6	10	7	1	4	9	4	2	10	10	7
Poultry	4	3	5	3	4	4	5	4	3	4	4
Motor and other vehicles	14	11	11	11	9	9	7	10	11	10	10
Household goods	12	8	10	8	8	10	9	5	9	8	9
Farm machinery	19	18	17	13	14	10	12	7	16	9	14
Agricultural products	3	2	6	.....	2	2	2	2	6	5	3
Musical instruments	1	1	2	2	2	1	2	2	1	1	1
Money	6	5	6	5	11	8	6	15	6	7	7
Credits minus debits	1	.....	1	7	2	2	1	2	1	.....	1
Other personal property	1	4	1	1	8	9	5	6	2	12	5
Totals	100	100	100	100	100	100	100	100	100	100	100

TABLE 20.—(a) Percentage Distribution of the Personal Property Values Returned for Taxation in the Rural Territory of Ten Counties; (b) the Highest and (c) the Lowest Township in Each County in Respect to the Value of Some Particular Kind of Personal Property, 1927*

Kind of property	District and County										
	Northwestern Ohio			Northeastern Ohio		Southeastern Ohio			Southwestern Ohio		Ten counties
	Henry	Seneca	VanWert	Ashtabula	Wayne	Adams	Carroll	Morgan	Butler	Union	
	Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*
Livestock:											
County (a)	31	35	37	31	24	38	37	38	23	38	33
High township (b)	40	44	44	49	30	50	48	46	32	48	43
Low township (c)	26	20	32	9	18	20	25	20	15	29	21
Motor and other vehicles:											
County (a)	15	12	11	14	9	11	12	10	13	10	12
High township (b)	21	14	13	21	13	13	17	18	22	11	16
Low township (c)	12	8	9	9	5	7	8	6	8	7	8
Household goods and musical instruments:											
County (a)	12	10	10	14	7	10	10	9	10	9	10
High township (b)	14	11	12	22	10	13	13	12	17	12	14
Low township (c)	9	8	8	8	5	8	6	7	7	6	7
Farm machinery:											
County (a)	12	12	12	8	7	9	8	7	7	7	9
High township (b)	18	15	15	14	9	12	12	10	9	10	12
Low township (c)	8	8	9	3	5	6	6	4	5	5	6
Farm products:											
County (a)	3	3	8	1	2	3	1	2	5	4	3
High township (b)	7	5	17	2	2	4	1	4	8	7	6
Low township (c)	2	2	3	0	1	0	0	1	3	2	1
Money:											
County (a)	16	16	13	12	26	16	19	21	16	13	17
High township (b)	24	31	19	18	37	28	28	32	24	22	26
Low township (c)	7	8	8	6	13	10	8	14	10	3	9
Credits minus debits:											
County (b)	7	11	8	13	22	10	7	8	18	17	12
High township (a)	24	18	12	19	37	22	13	14	27	32	22
Low township (c)	1	3	2	1	9	4	1	3	6	2	3
All other personal property:											
County (a)	4	1	1	7	3	3	6	5	8	2	4
High township (b)	10	7	2	18	9	9	16	13	26	10	12
Low township (c)	0	0	0	0	0	0	0	0	2	0	0

*In a few instances the personal property assessments of 1926 were used when the 1927 data were not available.

would appear that persons operating farms would not be affected by complete classification in just the same way as might the average of all rural residents.

A surprisingly large amount of variation occurred between townships, even in the same county, in the distribution of values to different kinds of personal property. For example, in one township in Ashtabula County, livestock represented 49 per cent of the total value returned and in another township only 9 per cent. It should be explained that these values are exclusive of any public utility property.

SOME VARIATIONS IN REAL ESTATE ASSESSMENTS

How much variation existed between valuations of different tracts of farm property after the 1925 reappraisement was completed? To assist in answering this question, data have been assembled in Table 21 and Figure 8 from a group of ten rural

TABLE 21.—Frequency Distribution of Assessed Valuations as Measured by Sales Value, After the 1925 Reappraisement of 1599 Ohio Farms

Assessed valuation in percentage of sales value	Number of properties in each group	Number in each group as percentage of total number	Group sales value	Group sales value as percentage of total
		Per cent	*Dollars*	*Per cent*
16- 20	1	.063	4,000	.046
21- 25	2	.125	10,500	.121
26- 30	6	.375	22,000	.254
31- 35	12	.750	60,350	.696
36- 40	19	1.188	139,350	1.606
41- 45	23	1.438	81,500	.939
46- 50	33	2.064	146,636	1.690
51- 55	54	3.377	374,455	4.316
56- 60	90	5.629	633,465	7.302
61- 65	83	5.191	584,680	6.740
66- 70	108	6.754	670,220	7.726
71- 75	112	7.004	702,980	8.103
76- 80	150	9.382	876,660	10.106
81- 85	112	7.004	653,780	7.536
86- 90	124	7.755	648,098	7.470
91- 95	159	9.944	871,722	10.049
96-100	100	6.254	555,451	6.403
101-105	86	5.378	384,695	4.435
106-110	74	4.628	363,415	4.189
111-115	61	3.815	254,669	2.936
116-120	38	2.376	123,750	1.427
121-125	38	1.751	128,655	1.483
126-130	23	1.438	81,734	.944
131-135	25	1.563	82,725	.956
136-140	16	1.001	72,150	.834
141-145	11	.688	27,350	.316
146-150	7	.438	15,325	.177
151-155	5	.313	27,080	.312
156-160	7	.438	5,500	.063
161-165	2	.125	3,750	.043
166-170	8	.500	24,050	.277
171 and over	20	1.251	43,850	.505
Total	1599	100.000	8,674,545	100.000

counties. The average (arithmetic mean) tax valuation of this group of farms was 83.06 per cent of the average sale price, almost exactly the same average relationship as existed between the market price and tax valuation of all farm real estate in Ohio, as determined by the State tax commission. Study of these data should reveal about the same range of variation in valuations as existed over all farm real estate after the 1925 reappraisement. A few properties were assessed at less than one fourth their sales price, others at more than 175 per cent of their sales price. One half of these properties were assessed between 69.56 and 102.22 per cent of their sale price. Properties in the high fourth and low fourth were so far removed from the average as to demonstrate clearly the fact of inequality, if such is to be judged by sales value.

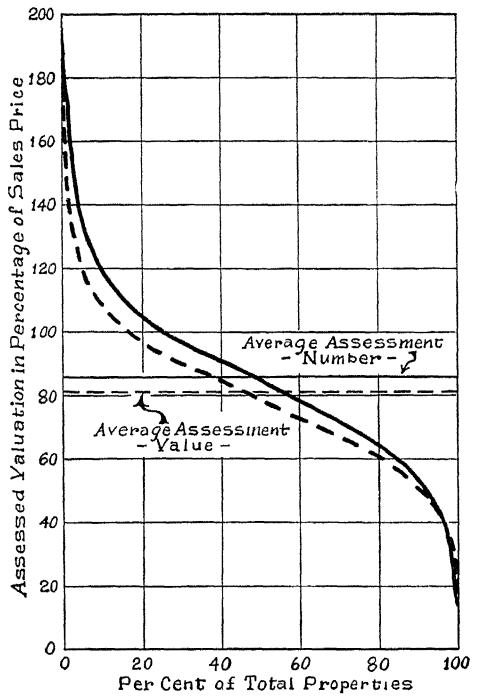

Fig. 8.—Variation in the assessed valuation of Ohio farms as measured by actual sales value

The median valuation based on number of properties fell at 85.95 per cent of the sales price. The median based on dollar values was 81.25 per cent of the sales price. This 4.70 per cent difference would mean that the large, more valuable properties were assessed lower, relative to market value, than the small, cheap properties. This recessive element in property taxation has placed a heavier burden on the small property owner. Whether assessment machinery can be administered with such a fine degree of exactitude as to remove this tendency is problematical. The more obvious task is to reduce the high degree of variation in assessment between individual properties.

Productivity, improvements, type of road, and distance to market are related to equality of tax valuation[1].—This is simply an extension of the idea that properties with high market value are usually assessed for less relative to the sale price than properties of low market value. That the probable effect of the above named factors might be measured, some 340 farms sold in 1927 and 1928 were used. Table 22 shows the results obtained.

TABLE 22.—Sales Price and Tax Valuation of Farm Real Estate of Various Degrees of Productivity, Property Improvements, Road Improvements, and Distance to Local Market

Factor affecting value	Number of farms	Sales price		Tax valuation		Tax valuation in percentage of sales price
		Dollars per acre	Relative value	Dollars per acre	Relative value	
Productivity,						
good	144	129	100	95	100	74
fair	113	79	61	74	78	94
poor	83	64	50	59	62	92
Improvements,*						
good	84	110	100	97	100	88
fair	106	99	90	85	87	86
poor	57	79	72	72	74	91
Roads,						
paved	92	122	100	98	100	80
gravel	169	95	78	84	86	88
earth	79	69	57	63	64	91
Miles to market,						
1	40	114	100	91	100	80
2	69	101	89	88	97	87
3	60	89	78	82	90	92
4	55	86	75	79	87	92
5	50	88	77	81	89	92
6	32	92	81	82	90	89
7	15	71	62	65	71	92
8 or more	19	40	35	37	41	93

*Some difficulty was involved in applying a classification to improvements for some otherwise well-improved tracts had a relatively small part of the total investment in buildings.

Productivity.—These 340 farms, when classified according to productivity as good, fair, and poor showed that the difference in tax valuations of these three classes of farms was not proportionate to the difference in sales price. Expressed as ratios, the tax valuations in terms of sale price for the three classes of farms were: good farms, 74 per cent; fair farms, 94 per cent; poor farms, 92 per cent. It may be concluded that when classified according to productivity, the data indicate that good farms are taxed relatively lower than fair or poor farms. As between fair and poor farms, no significant difference was apparent. It is believed this may have been due to the method of selection.

[1]Acknowledgment is made of the valuable assistance given by farm realtors, local farm organizations, and local taxing officials in classifying these data.

Improvements.—When classified according to improvements the same general decline in sale price and tax valuation was indicated as when classified according to productivity. This important difference was indicated by the data: no very significant variation in the ratio of tax valuation to sale price was evident between the farms classified, good, fair, and poor as to improvements.

Type of road bordering farm.—Farms were classified according to type of road. Paved roads were made inclusive of all kinds of surfacing other than loose stone or gravel. Stone and gravel roads were placed in another classification and earth roads were placed in a third class. That the type of road bordering a farm influences the sale price of the land is a probability. It cannot be concluded, however, that the difference in sale price of farms on paved, gravel, and earth roads as given in Table 22 is due to roads alone because the chances are more than even that the improvements and productivity of farms located on paved roads will be of higher type than the improvements and productivity of farms located on earth roads. Thus, desirable factors tend to be cumulative.

Farms on gravel and earth roads respectively sold for 78 per cent and 57 per cent as much per acre as farms on paved roads. The tax valuation showed less relative difference: farms on gravel and earth roads, respectively, were taxed 85 and 64 per cent as high as farms on paved roads. Therefore, the tax valuation ratio rises as the type of road declines. The ratios were: paved roads, 80 per cent; stone or gravel roads, 88 per cent; and earth roads, 91 per cent.

Distance from market.—When farms were classified according to miles from the local market town, a fairly important difference in the sale price and tax valuation was evident in connection with the various distances. However, the tax valuation was less sensitive than sale price to the effect of location. The most notable effect was indicated in the first two miles. This was true of sale price, tax valuation, and ratio of sale price to tax valuation. The latter rose from 80 per cent in the first mile to 92 per cent in the third mile. From three to seven miles the ratio remained practically constant and only a slight increase was evident for distances over seven miles.

From the data assembled in Table 22 it seems fairly evident that, usually, good farms with good improvements, on good roads,

and close to market carry a lighter tax burden relative to the sale price than unproductive, poorly improved farms on earth roads and far from market.

INCIDENCE OF TAXES ON LAND AND CAPITAL GOODS

That the burden of a tax on land value is not shifted from the owner is an economic axiom, for the supply of land is changed in no way by the tax. On the other hand a tax on capital goods—things produced by man's labor—does tend to be shifted, for the supply of goods is influenced by cost of production and the price the goods will command. Literal and universal application of this principle to capital goods would be erroneous. Much capital once committed to a certain use is irrevocable. Perhaps an enterprise once started cannot be changed without great loss. Regardless of lessened demand or an increased cost, as for instance an unexpected tax, the business must be carried on. This is particularly true of agriculture with a relatively large permanent investment and slow capital turn over. In the decade just ended agricultural production has tended to be greater than demand—a buyer's market having predominated. Under such conditions the probability of shifting even part of the farm tax burden to the consumer would be at the minimum.

TABLE 23.—Percentage Distribution Between Land and Buildings of the Real Estate Tax Duplicate in Selected Rural Townships and in All Incorporated Territory in Ohio, 1926*

Area	Rural townships†			Incorporated territory		
	Land	Buildings	Total	Land	Buildings	Total
	Pct.	*Pct.*	*Pct.*	*Pct.*	*Pct.*	*Pct.*
Northwestern Ohio	77	23	100	30	70	100
Northeastern Ohio	71	29	100	35	65	100
Southeastern Ohio	77	23	100	30	70	100
Southwestern Ohio	76	24	100	30	70	100
State	76	24	100	31	69	100

*Assembled from the Annual Reports of the Ohio Tax Commission.
†One township in each county selected so as to contain only farm real estate.

The theory that taxes on land value cannot be shifted but must remain the sole expense of the owner applies alike to agricultural and to urban land. But as between farm and urban real estate, greater possibility of tax shifting is connected with the latter; for, while the assessed valuation of farm real estate consists of three-fourths land and one-fourth buildings, the assessed valuation of urban real estate is approximately one-third land and two-thirds buildings. Table 23 has been assembled to show this difference in

distribution of assessments. It would appear that heavy taxes on agricultural land values may more seriously affect the owner's income, in the long run, than similar taxes on other property.

TAX DELINQUENT REAL ESTATE

An increasing volume of tax delinquency has accompanied the increasing rates of property taxation in the past twenty years. The data presented in Table 24 show that prior to 1920 delinquency was growing in significance although not so rapidly as to cause particular concern. Since 1920 the trend in delinquency has been so rapidly upward that the accumulated delinquent real estate taxes in Ohio were equal to 13.4 per cent of all real estate tax levies in

TABLE 24.—Delinquent Taxes on All Real Estate in Ohio, and in 88 Rural Townships, in Selected Years, 1912 to 1928

Year*	All real estate in Ohio†			All real estate in 88 rural townships‡		
	Total delinquency from previous years	Increase in delinquency		Total delinquency from previous years	Increase in delinquency	
		Over 1912	Over previous year mentioned		Over 1912	Over previous year mentioned
	Dol.	*Pct.*	*Pct.*	*Dol.*	*Pct.*	*Pct.*
1912	2,257,011	.....	.....	21,073	.....	.....
1913	2,302,376	2	2	23,224	7	7
1920	5,253,555	133	128	33,052	53	42
1927	24,890,285	1003	374	126,113	582	282
1928	30,988,562	1315	25	165,786	765	31

*The delinquency would originate previous to the year mentioned.
†Derived from the Annual Reports of the Ohio Tax Commission.
‡Assembled from records in the Office of the Auditor of State.

1928 as compared with 4.38 per cent in 1912. That this is not purely a problem of farm taxation is suggested by the rate of growth of tax delinquency in selected rural areas. In 88 rural townships, accumulated delinquent taxes were equal to 7.75 per cent of the total real estate tax levy in 1928 as compared with 2.56 per cent in 1912. These percentages are approximately one half as large as those applying to all real estate in Ohio in the same years.

SUMMARY

1. Reason for concern over the farm tax situation is suggested by the fact that farm taxes in terms of gross cash farm income were 60 per cent higher in 1928 than in 1913. As a 1921 to 1928 average, property taxes and assessments were equal to 12.60 per cent of the gross cash, 20.57 per cent of the net cash, or 12.62 per cent of the total net agricultural income of Ohio farmers. Home-produced food, fuel, and house rent, which were given a cash

value in the total net income, were approximately equal to total cash expenses of agriculture. Other taxes obviously paid by farmers took an additional 2 per cent of the total net income.

2. The above comparisons are based on the combined income from labor and the physical wealth used in agriculture. Elimination of labor from the picture may be attained by the comparison of taxes and the net rent realized on farm real estate let for cash. Property taxes on cash-rented farms took 17.08 per cent of the estimated net rent in 1900 and 38.44 per cent in 1928.

3. Farm account records from different sections of the State indicate, as a general rule, that taxes have taken a larger percentage of the income on eastern Ohio farms than on western Ohio farms. As between different quarters of the State taxes have been highest, in terms of income, in northeastern Ohio and lowest in southwestern Ohio.

4. Accounts kept by farm operators show a wide diversity in relationship of taxes and income on owner-operated farms. This variation existed over all the period, 1914 to 1927, for which the data were analyzed. In 1914, one fourth of the farm records showed a tax of less than 6.09 per cent of the farm income; on another fourth, more than 11.45 per cent; and, the average (median) of all records was 8.20 per cent. In 1927 on one fourth of the farms taxes took less than 9.03 per cent of the farm income; on another fourth, 18.04 per cent; and the average (median) was 12.93 per cent. These farms produced a higher average income than the average of all Ohio farms and consequently had a lighter average tax burden. However, the fact was demonstrated by these data that in terms of income a wide range of variation in tax burden exists on Ohio farms. Part of this would be caused by inequalities of assessment and part by variations in the income realized on different farms.

5. Since farm taxation is levied on a property base the correlation with income is low. Taxes were $150 on farms with an average farm income of $750. Taxes averaged $335 on farms with a farm income of $4250. In the first case taxes took 20 per cent of the farm income, and in the last case less than 8 per cent of the income. The very nature of property taxation would cause the heaviest burden to fall on the farms producing a low income.

6. Assessment of property is an important phase of property tax administration. Public welfare would justify the application of more exact assessment methods. The data show that the burden

of uniform rate property taxes tends to be shifted from personal property and buildings to the land through inequalities of assessment. Further, great inequalities of assessment exist between different tracts of real estate. After the 1925 reappraisement the farms in a sample of 1599 had a range of assessment from less than 20 per cent of the sales price on some farms to more than 175 per cent of the sales price on other farms. One half of these assessments ranged from 69 per cent to 102 per cent of the sales price. Better methods of appraisal by local assessors would be beneficial. This is doubly important because present methods seem to discriminate against the properties of low value which no doubt produce a low income.

7. Part of the heavy tax burden can be attributed to belated tax and fiscal reform in the time of rapid economic change. As a matter of necessity the older objects of taxation have carried the cost of increasing public expenditures. But part of the burden must be attributed to the inability of the farm business to shift these taxes to the consumer in the same degree as other taxes are shifted to the farmer.

8. Tax delinquency has greatly increased in Ohio in the last score of years. The data show, however, that this is by no means a purely rural condition, for selected rural areas have had a slower rate of increase in real estate tax delinquency than has the entire State.